

What is claimed is:

1. A method for controlling an engine coupled to a transmission having an input speed and an  
5 output speed, the method comprising:

during a tip-out condition and during a gear ratio change to a future gear, controlling the engine speed to a synchronous speed in the future gear ratio by adjusting an engine operating  
10 parameter so that the gear change can be performed with the engine speed close to the engine speed that will be achieved after the gear change is completed.

2. The method of claim 1 wherein said  
15 synchronous speed is a synchronous transmission input speed.

3. A method for controlling an engine coupled to a transmission having an input speed and an  
20 output speed, the method comprising:

during a closed pedal condition and during a gear ratio change to a future gear, controlling the engine speed to a synchronous speed in the future gear ratio by adjusting an engine operating  
25 parameter so that the gear change can be performed with the engine speed close to the engine speed that will be achieved after the gear change is completed.

4. The method of claim 3 wherein said  
30 synchronous speed is a synchronous transmission input speed.

5. A method for controlling an engine coupled to a transmission having an input speed and an output speed, the method comprising:

during a tip-out condition, controlling the  
5 engine speed to a synchronous speed, where the synchronous speed is based on a transmission state and the transmission output speed so that transmission input speed is at, or slightly below, the transmission output speed times the current gear  
10 ratio of the transmission; and when positive powertrain output torque is again applied, providing said powertrain output torque without delay.

6. The method recited in Claim 5, wherein the  
15 engine is coupled to the transmission via a torque converter, wherein said torque converter is unlocked while maintaining a positive powertrain output and then locked after transitioning from said positive powertrain output to a negative powertrain output.

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7. A method for controlling an engine coupled to a transmission having an input speed and an output speed, the method comprising:

25 during a closed pedal condition, controlling the engine speed to a synchronous speed, where the synchronous speed is based on a transmission state and the transmission output speed so that transmission input speed is at, or slightly below,  
30 the transmission output speed times the current gear ratio of the transmission; and when positive powertrain output torque is again applied, providing said powertrain output torque without delay.